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EXAMINER	
LOGIE, MICHAEL J	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/542,187	GROSSENBACHER ET AL.	
	Examiner	Art Unit	
	Michael J. Logie	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-71 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-71 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 7/13/2005.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7, 9-13, 16-18, 20-43, 46, 48-54, 56-61 and 67-69 are rejected under 35 U.S.C. 102(b) as being anticipated by Drew et al. (US patent no. 5,313,061).

In regards to claim 1, Drew et al. teach a mass spectrometer assembly (fig. 2b, 18) comprising: a base configured to define at least a portion of a vacuum chamber volume within which at least some operations may be performed with respect to mass spectrometry (fig. 6c, 20a); a mass separator component configured to perform at least some mass separation operations within the vacuum chamber volume (fig. 6c, 500a (configuration seen in figure 4b)); and a lid coupled to the mass separator component and configured to be removably operable coupled with respect to the base, wherein the lid is configured to be positioned in a first operable position to form a hermetical seal with the base and provide the mass separator component at least partially within the vacuum chamber volume, and a second operable position wherein at least a portion of the lid is spaced from the base and the mass separator component is at least partially removed from the vacuum chamber volume (col. 14, lines 22-45 and col. 14, lines 12-14).

In regards to claim 2, Drew et al. teach the mass spectrometer assembly of claim 1 wherein the mass separator component comprises an entirety of the mass separator (col. 14, lines 22-45).

In regards to claim 3, Drew et al. teach the mass spectrometer assembly of claim 1 wherein an entirety of the mass separator component is within the vacuum chamber volume (col. 11, lines 23-25).

In regards to claim 4, Drew et al. teach the mass spectrometer assembly of claim 1 wherein the mass separator component is entirely removed from the vacuum chamber volume with the lid positioned in the second operating position (col. 14, lines 22-45 and col. 14, lines 12-14).

In regards to claim 5, Drew et al. teach the mass spectrometer assembly of claim 1 wherein an entirety of the lid is spaced from the base with the lid in the second operable position (col. 14, lines 22-45 and col. 14, lines 12-14, since there is a removable flange, it is inherent that the entirety of the lid is spaced from the base with the lid in the second operable position).

In regards to claim 7, Drew et al. teach t he mass spectrometer assembly of claim 1 wherein the mass separator component comprises an ion trap (col. 6, lines 18-21).

In regards to claim 9, Drew et al. teach the mass spectrometer assembly of claim 1 wherein the lid further comprises an opening configured to receive at least one electrical connection configured to connect to the mass separator component (fig. 4b, 50).

In regards to claim 10, Drew et al. teach the mass spectrometer assembly of claim 1 wherein the lid further comprises an opening configured to introduce a sample to the vacuum chamber volume (fig. 4b, 51).

In regards to claim 11, Drew et al. teach the mass spectrometer assembly of claim 1 wherein the lid further comprises an opening configured to introduce ions to the vacuum chamber volume (col. 11, lines 43-60).

In regards to claim 12, Drew et al. teach the mass spectrometer assembly of claim 1 further comprising an external component coupled to the lid and configured to perform at least one operation with respect to mass spectrometry (fig. 4b, 34).

In regards to claim 13, Drew et al. teach the mass spectrometer assembly of claim 12 wherein the external component comprises an ion source (fig. 4b, 34).

In regards to claim 16, Drew et al. teach the mass spectrometer assembly of claim 12 wherein the external component comprises an inlet component (fig. 9a, 914).

In regards to claim 17, Drew et al. teach the mass spectrometer assembly of claim 12 wherein the external component comprises both an inlet component (fig. 9a, 914) and an ion source component (fig. 9a, 24).

In regards to claim 18, Drew et al. teach a mass spectrometry vacuum chamber lid assembly (fig. 5c) comprising: a body (fig. 5d, 501a); a mass separator component coupled to the body (col. 14, lines 1-14) and configured to perform at least some operations with respect to mass separation for use during mass spectrometry (col. 11, 59-60) and wherein the body is configured to at least partially define a volume (fig. 6c, 500a) at least partially surrounding the mass separator component (col. 14, lines 1-10)

when the body is hermetically sealed to a base of a vacuum chamber assembly (col. 14, lines 12-14), wherein the body is further configured to be removable from the base to at least partially remove the mass separator component from the vacuum chamber volume (col. 14, lines 22-45).

In regards to claim 20, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 18 wherein the mass separator component comprises an ion trap (col. 6, lines 18-21).

In regards to claim 21, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 18 further comprising a sample inlet component coupled to the body (fig. 2a, 16a).

In regards to claim 22, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 21 wherein the sample inlet component comprises a semi-permeable membrane (col. 11, lines 29-32).

In regards to claim 23, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 18 further comprising an ion source component coupled to the body (fig. 4b, 34).

In regards to claim 24, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 23 wherein the body comprises an exterior surface (fig. 5d, 503) and the ion source component is coupled to the exterior surface (col. 11, lines 43-58).

In regards to claim 25, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 24 wherein the body further comprises an opening

providing fluid communication between the ion source and the vacuum chamber volume (fig. 9a, 914) and at least a portion of the sample inlet component is located between the opening and the mass separator component (col. 11, lines 29-42, note: fig. 4b).

In regards to claim 26, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 24 wherein the body further comprises a first opening providing fluid communication between the ion source component and the mass separator component (col. 17, lines 1-17, note: fig. 9a, 1110).

In regards to claim 27, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 26 wherein the body further comprises a second opening providing fluid communication between the first opening and outside the vacuum chamber volume (fig. 9a, 914).

In regards to claim 28, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 27 wherein the body comprises at least one edge extending between exterior and interior surfaces (fig. 9a, hole mounting 1110 in plate 912) and the second opening extends between the edge and the first opening, wherein the second opening is configured to provide one or more of reagent gas, sample, make up gas, and vacuum to the opening (col.16, lines 34-44 and col. 17, lines 8-23).

In regards to claim 29, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 23 further comprising a sample inlet component coupled to an interior surface of the body (col. 13, lines 41-44, note: 5d).

In regards to claim 30, Drew et al. teach he mass spectrometry vacuum chamber lid assembly of claim 29 wherein at least a portion of the sample inlet component is

located between the interior surface and the mass separator component (col. 13, lines 41-44, note fig. 5d).

In regards to claim 31, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 23 wherein the ion source component is configured to be removably operable coupled with respect to the lid (col. 17, lines 24-31, note: figure 9a, 906) and configured to be positioned in a first operable position to seal with the lid (col. 17, lines 25-31) and a second operable position wherein at least a portion of the ion source component is spaced from the lid (fig. 9a, 906, when pins are not mounted on the lid, the ion source is spaced from the lid).

In regards to claim 32, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 31 wherein the ion source is entirely removed from the lid in the second operable position (figure 9a shows the ion source entirely removed from the lid and thus in the second operable position).

In regards to claim 33, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 18 wherein the mass separator component is configured to separate ions in a direction substantially parallel with the alignment of the interior surface of the body (col. 11, lines 43-58, note: figure 4b).

In regards to claim 34, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 18 wherein the mass separator component is configured to separate ions in a direction substantially perpendicular with the alignment of the interior surface of the body (col. 11, lines 59-68 and col. 12, lines 1-13, note: figures 4a and 4b).

In regards to claim 35, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 18 further comprising an external component coupled to the body and configured to perform at least one operation with respect to mass spectrometry (fig. 4b, 44).

In regards to claim 36, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 18 wherein the mass separator component comprises an entirety of the mass separator (col. 14, lines 22-45).

In regards to claim 37, Drew et al. teach a mass spectrometer (fig. 2b, 18) comprising: a vacuum chamber housing (fig. 6c) comprising a lid (fig. 6c, 500a) and a base (fig. 6c, 20a), wherein the lid and the base are configured to define a vacuum chamber volume (chamber volume is contained in 20a of fig. 4b), wherein the base comprises a at least one wall configured to couple with the lid (fig. 6c, 610), wherein the lid comprises: an interior surface (fig. 6c, 500a) and an exterior surface (fig. 6c, 501a); at least one edge extending between the interior and exterior surfaces (col. 13, lines41-44); a first opening extending through the lid from the interior surface to the exterior surface (fig. 9a, hole mounting 1110 in plate 912); and a second opening extending from the edge to the first opening (fig. 9a, 914); a mass separator component coupled to the interior surface of the lid (col. 14, lines 1-14) and configured to perform at least some operations with respect to mass separation for use in mass spectrometry (col. 11, lines 43-60); an ion source component coupled to the exterior surface of the lid (fig. 4b, 34) and configured to perform at least some operations with respect to providing ions for use in mass spectrometry (col. 11, lines 43-58), wherein the first opening provides fluid

communication between the mass separator and the ion source (fig. 9a, hole mounting 1110 in plate 912, where 36 is part of the mass separator); wherein the lid is configured to be removably operably coupled with respect to the base (col. 14, lines 22-45 and col. 14, lines 14-14) and positioned in a first operable position to seal with the base (fig. 6c) and provide the mass separator component at least partially within the vacuum chamber volume (col. 12, lines 35-46), and a second operable position at least partially removed from the base to at least partially remove the mass separator component from the vacuum chamber volume (col. 14, lines 22-45); and a vacuum source (fig. 4b, 46) in fluid communication with the vacuum chamber volume (in figure 4b, 46 is in fluid communication with vacuum chamber volume enclosed in 20a), wherein the seal of the base and the lid is configured to maintain a vacuum within the vacuum chamber volume sufficient to perform at least some operations with respect to mass spectrometry (col. 12, lines 35-46).

In regards to claim 38, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 37 wherein an entirety of the mass separator component is with the vacuum chamber volume (col. 11, lines 23-25).

In regards to claim 39, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 37 wherein the seal comprises a hermetical seal (col. 14, lines 12-14).

In regards to claim 40, Drew et al. teach the mass spectrometry vacuum chamber lid assembly of claim 37 wherein the mass separator component is entirely removed in the second operable position (col. 14, lines 22-45).

In regards to claim 41, Drew et al. teach a mass spectrometer operational method (inherent in the apparatus of figure 4b) comprising: providing a mass spectrometry assembly (fig. 4b) comprising a base (fig. 4b, 20a), a lid (fig. 5c) and a mass separation component configured to perform at least some operations with respect to mass spectrometry (col. 11, lines 43-58), the base and lid substantially defining a vacuum chamber volume when the lid is affixed to the base (col. 14, lines 1-14), wherein the mass separator component is coupled to the lid (col. 14, lines 1-14) and occupies a portion of the vacuum chamber volume with the lid affixed to the base (col. 11, lines 13-28); first performing mass analysis operations within the vacuum chamber volume using the mass separation component (col. 11, lines 43-58 and col. 12, lines 1-13); after the first performing, at least partially removing the lid from the base (col. 14, lines 4-14 and col. 14, lines 22-45), wherein the removing of the lid also at least partially removes the mass separator component from the vacuum chamber volume (col. 14, lines 6-10); inspecting the mass separator component with the mass separator component at least partially removed from the vacuum chamber volume (col. 14, lines 6-10); sealing the lid and the base after the inspecting (col. 14, lines 4-14); and second performing mass analysis operations using the mass separator component after the returning (since Drew et al. disclose inspecting the analyzer component, this step is inherent in order to continue mass analysis. Also cite col. 14, lines 30 "removable vacuum flange" meaning the method of removing and the method of sealing).

In regards to claim 42, Drew et al. teach the mass spectrometer operational method of claim 41 wherein the removing entirely removes the lid from the base (fig. 6c and 6d).

In regards to claim 43, Drew et al. teach the mass spectrometer operational method of claim 41 wherein the removing entirely removes the mass separator component from the vacuum chamber volume (col. 14, lines 4-14 and col. 14, lines 39-42, once seal is broken the mass separator component is entirely removed from the vacuum chamber housing).

In regards to claim 46, Drew et al. teach the mass spectrometer operational method of claim 41 wherein the mass separator component comprises an ion trap (col. 6, lines 18-21).

In regards to claim 48, Drew et al. teach the mass spectrometer operational method of claim 41 wherein the mass spectrometry assembly further comprises a sample inlet component coupled to the lid and the sample inlet component occupies a portion of the vacuum chamber volume with the lid and base affixed (col. 16, lines 34-44).

In regards to claim 49, Drew et al. teach the mass spectrometer operational method of claim 48 wherein the sample inlet component comprises a semi-permeable membrane (col. 11, lines 29-32).

In regards to claim 50, Drew et al. teach the mass spectrometer operational method of claim 41 wherein the mass spectrometry assembly further comprises an ion

source component coupled to the lid and the ion source component occupies a portion of the vacuum chamber volume with the lid affixed to the base (fig. 4b, 34).

In regards to claim 51, Drew et al. teach the mass spectrometer operational method of claim 50 wherein the ion source component comprises an electron impact ion source (col. 11, lines 29-42).

In regards to claim 52, Drew et al. teach the mass spectrometer operational method of claim 41 wherein the mass spectrometry assembly further comprises an ion source component coupled to the lid (fig. 4b, 34) and a sample inlet component coupled to the lid (col.13, lines 41-44), and wherein the ion source and sample inlet components occupy a portion of the vacuum chamber volume with the lid affixed to the base (col. 13, lines 32-44).

In regards to claim 53, Drew et al. teach the mass spectrometer operational method of claim 52 wherein the at least partially removing the lid also at least partially removes the ion source component and the sample inlet component from the vacuum chamber volume (col. 14, lines 4-14 and col. 16, lines 34-44, since the ion source component and the sample inlet component are affixed to the lid, by removing the lid it is inherent that the components are removed as well).

In regards to claim 54, Drew et al. teach the mass spectrometer operational method of claim 41 wherein the mass spectrometry assembly further comprises an ion source component coupled to the lid (fig. 4b, 34) and the ion source component occupies a portion of the vacuum chamber volume (fig. 4b, 34 is within 20a) with the lid

affixed to the base (fig. 6c), and the first performing the mass analysis comprises providing ions from the ion source to the vacuum chamber volume (col. 11, lines 43-58).

In regards to claim 56, Drew et al. teach the mass spectrometer operational method of claim 41 wherein the first performing the mass analysis comprises providing ions to the vacuum chamber volume through an opening extending through the lid (col. 16, lines 34-44), providing sample to vacuum chamber volume, and contacting the ions with the sample (col. 11, lines 29-42).

In regards to claim 57, Drew et al. teach the mass spectrometer operational method of claim 56 further comprising providing a first pressure within the opening (col. 11, lines 29-32) and a second pressure within the vacuum chamber volume (fig.4b, 46).

In regards to claim 58, Drew et al. teach the mass spectrometer operational method of claim 57 wherein the first and second pressures are the same (col. 14, lines 4-14, when the lid assembly is removed first and second pressures become the same).

In regards to claim 59, Drew et al. teach the mass spectrometer operational method of claim 57 wherein the first and second pressures are different (col. 11, lines 29-32, when sample provides a low pressure to the inlet the pressure is different from the pressure maintained by the vacuum pump (fig. 4b, 46) for the vacuum chamber).

In regards to claim 60, Drew et al. teach the mass spectrometer operational method of claim 56 wherein the contacting the ions with sample occurs in the opening (col. 16, lines 34-44).

In regards to claim 61, Drew et al. teach the mass spectrometer operational method of claim 41 wherein the mass spectrometry assembly further comprises an ion

source component coupled to the exterior of the lid (fig. 4b, 34, wherein the exterior of the lid is best seen in figure 5d).

In regards to claim 67, Drew et al. teach the mass spectrometer operational method of claim 41 wherein the mass spectrometry assembly further comprises an external component (fig. 4b, 34).

In regards to claim 68, Drew et al. teach the mass spectrometer operational method of claim 67 wherein the external component comprises one or both of an ion source component (fig. 4b, 34, better seen in figure 9a) and an sample inlet component (fig. 9a, 914).

In regards to claim 69, Drew et al. teach the mass spectrometer operational method of claim 41 wherein the mass separator component comprises an entirety of the mass separator (col. 14, lines 22-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6, 8, 19, 45, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drew et al. (US patent no. 5,313,061) and further in view of Kawanami et al. (US paten no. 4,755,685).

In regards to claim 6, Drew et al. differ from the claimed invention by not disclosing wherein the mass separator component comprises at least one focusing lens.

Kawanami et al. teach wherein the mass separator component comprises at least one focusing lens (Abstract, lines 5-7).

Since both Drew et al. and Kawanami et al. teach a mass spectrometer assembly, it would be obvious to one of ordinary skill in the art to have wherein the mass separator component comprises at least one focusing lens of Kawanami et al. in the device of Drew et al. because the focusing lenses maximize the resolution of the mass spectrometer assembly.

In regards to claim 8, Drew et al. teach the mass spectrometer assembly of claim 1 wherein the mass separator component comprises an ion trap (col. 6, lines 18-21).

Drew et al. differ from the claimed invention by not teaching the mass separator component comprises focusing lenses.

Kawanami et al. teach wherein the mass separator component comprises focusing lenses (Abstract, lines 5-7).

Since both Drew et al. and Kawanami et al. teach a mass spectrometer assembly, it would be obvious to one of ordinary skill in the art to have wherein the mass separator component comprises focusing lenses of Kawanami et al. in the device of Drew et al. because the focusing lenses maximize the resolution of the mass spectrometer assembly.

In regards to claim 19, Drew et al. differ from the claimed invention by not disclosing wherein the mass separator component comprises at least one focusing lens.

Kawanami et al. teach wherein the mass separator component comprises at least one focusing lens (Abstract, lines 5-7).

Since both Drew et al. and Kawanami et al. teach a mass spectrometer assembly, it would be obvious to one of ordinary skill in the art to have wherein the mass separator component comprises at least one focusing lens of Kawanami et al. in the device of Drew et al. because the focusing lenses maximize the resolution of the mass spectrometer assembly.

In regards to claim 45, Drew et al. differ from the claimed invention by not teaching the mass separator component comprises focusing lenses.

Kawanami et al. teach wherein the mass separator component comprises focusing lenses (Abstract, lines 5-7).

Since both Drew et al. and Kawanami et al. teach a mass spectrometer assembly, it would be obvious to one of ordinary skill in the art to have wherein the mass separator component comprises focusing lenses of Kawanami et al. in the device of Drew et al. because the focusing lenses maximize the resolution of the mass spectrometer assembly.

In regards to claim 47, Drew et al. teach the mass spectrometer assembly of claim 41 wherein the mass separator component comprises an ion trap (col. 6, lines 18-21).

Drew et al. differ from the claimed invention by not teaching the mass separator component comprises focusing lenses.

Kawanami et al. teach wherein the mass separator component comprises focusing lenses (Abstract, lines 5-7).

Since both Drew et al. and Kawanami et al. teach a mass spectrometer assembly, it would be obvious to one of ordinary skill in the art to have wherein the mass separator component comprises focusing lenses of Kawanami et al. in the device of Drew et al. because the focusing lenses maximize the resolution of the mass spectrometer assembly.

Claims 14, 15 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drew et al. (US patent no. 5,313,061) and further in view of Kato (US pgPub 2002/0125425).

In regards to claim 14, Drew et al. differ from the claimed invention by not disclosing wherein the external component comprises a plurality of ion sources.

Kato teaches wherein the external component comprises a plurality of ion sources (abstract lines 1-5).

Since both Drew et al. and Kato teach a mass spectrometer assembly, it would be obvious to one of ordinary skill in the art to have wherein the external component comprises a plurality of ion sources of Kato in the device of Drew et al. because the plurality of ion sources would provide the capability of performing a plurality of measurements with a shorter time duration of switching ion sources.

In regards to claim 15, Drew et al. teach an electron impact ion source (col. 11, lines 35-42).

Drew et al. differ from the claimed invention by not disclosing wherein one of the plurality of ion sources comprises another of the plurality of ion sources comprises a chemical ionization ion source.

Kato teaches wherein one of the plurality of ion sources comprises an electron impact ion source and another of the plurality of ion sources comprises a chemical ionization ion source ([0028], lines 1-8).

Since both Drew et al. and Kato teach a mass spectrometer assembly, it would be obvious to one of ordinary skill in the art to have wherein one of the plurality of ion sources comprises an electron impact ion source and another of the plurality of ion sources comprises a chemical ionization ion source of Kato in the device of Drew et al. because the plurality of ion sources would provide the capability of performing a plurality of measurements with a shorter time duration of switching ion sources.

In regards to claim 55, Drew et al. teach the mass spectrometer operational method of claim 41 wherein the lid comprises an opening (fig. 9a, 914) and the first performing the mass analysis (col. 11, lines43-68 and col. 12, lines 1-13).

Drew et al. differ from the claimed invention by not disclosing providing a chemical ionization plasma and a chemical ionization reagent gas to the vacuum chamber volume using the opening.

Kato teaches providing a chemical ionization plasma and a chemical ionization reagent gas to the vacuum chamber volume using the opening ([0121], lines 1-15 and [0122], lines 1-6).

Since both Drew et al. and Kato teach a mass spectrometer assembly, it would be obvious to one of ordinary skill in the art to have providing a chemical ionization plasma and a chemical ionization reagent gas to the vacuum chamber volume using the opening of Kato in the device of Drew et al. because the plurality of ion sources would provide the capability of performing a plurality of measurements with a shorter time duration of switching ion sources.

Claims 44, 66 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drew et al. (US patent no. 5,313,061) and further in view of Itoi (US patent no. 5,837,883).

In regards to claim 44, Drew et al. differ from the claimed invention by not disclosing wherein the first performing mass analysis operations further comprises fouling the mass separator component and further comprising replacing the fouled mass separator component with a clean mass separator component.

Itoi teaches wherein the first performing mass analysis operations further comprises fouling the mass separator component and further comprising replacing the fouled mass separator component with a clean mass separator component (col. 3, lines 62-67 and col. 4, lines 1-9).

Since both Drew et al. and Itoi teach a mass spectrometer operation method, it would be obvious to one of ordinary skill in the art to have wherein the first performing mass analysis operations further comprises fouling the mass separator component and further comprising replacing the fouled mass separator component with a clean mass

separator component of Itoi in the method of Drew et al. because it would provide a more efficient means to change the mass separator component between performances.

In regards to claim 66, Drew et al. differ from the claimed invention by not disclosing wherein the first performing the mass analysis further comprises fouling the ion source component, and further comprising replacing the fouled ion source component with a clean ion source component.

Itoi teaches wherein the first performing the mass analysis further comprises fouling the ion source component, and further comprising replacing the fouled ion source component with a clean ion source component (col. 3, lines 62-67 and col. 4, lines 1-9).

Since both Drew et al. and Itoi teach a mass spectrometer operation method, it would be obvious to one of ordinary skill in the art to have wherein the first performing the mass analysis further comprises fouling the ion source component, and further comprising replacing the fouled ion source component with a clean ion source component of Itoi in the method of Drew et al. because it would provide a more efficient means to change the ion source component between performances.

In regards to claim 70, Drew et al. differ from the claimed invention by not disclosing wherein before the second performing, exchanging the external component with another external component.

Itoi teaches wherein before the second performing, exchanging the external component with another external component (col. 3, lines 62-67 and col. 4, lines 1-9, note: figure 1, 12 is external to 11).

Since both Drew et al. and Itoi teach a mass spectrometer operation method, it would be obvious to one of ordinary skill in the art to have wherein before the second performing, exchanging the external component with another external component of Itoi in the method of Drew et al. because it would provide a more efficient means to change the ion source component between performances.

Claims 62 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drew et al. (US patent no. 5,313,061) and further in view of Kato (US pgPub 2002/0125425) and Blessing et al. (US patent no. 6,239,429).

In regards to claim 62, Drew et al. differ from the claimed invention by not disclosing wherein the ion source component comprises a plurality of ion sources.

Kato teaches wherein the ion source component comprises a plurality of ion sources ([0028], lines 1-8).

Since both Drew et al. and Kato teach a mass spectrometer assembly, it would be obvious to one of ordinary skill in the art to have wherein the ion source component comprises a plurality of ion sources of Kato in the device of Drew et al. because the plurality of ion sources would provide the capability of performing a plurality of measurements with a shorter time duration of switching ion sources.

The combined invention by Drew et al. and Kato differs from the claimed invention by not disclosing before the at least partially removing the lid from the base, at least partially removing one of the plurality of ion sources from the lid.

Blessing et al. teach before the at least partially removing the lid from the base, at least partially removing one of the plurality of ion sources from the lid (col. 6, lines 44-59).

Since both the combined invention of Drew et al. and Kato and Blessing et al. teach a mass spectrometer operation method, it would be obvious to one of ordinary skill in the art to have the at least partially removing the lid from the base, at least partially removing one of the plurality of ion sources from the lid of Blessing et al. in the combined method of Drew et al. and Kato because it would allow the removal of the ion source from the vacuum chamber for cleaning while leaving the rest of the assembly in tact, thus improving the efficiency of replacing the ion source.

In regards to claim 63, Drew et al. differ from the claimed invention by not disclosing wherein before the second performing, the one ion source is replaced with another ion source.

Blessing et al. teach wherein before the second performing, the one ion source is replaced with another ion source (col. 6, lines 54-59).

Since both the combined invention of Drew et al. and Kato and Blessing et al. teach a mass spectrometer operation method, it would be obvious to one of ordinary skill in the art to have wherein before the second performing, the one ion source is replaced with another ion source of Blessing et al. in the combined method of Drew et al. and Kato because it would allow the removal of the ion source from the vacuum chamber for replacement while leaving the rest of the assembly in tact, thus improving the efficiency of replacing the ion source.

Claims 64 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drew et al. (US patent no. 5,313,061) and further in view of Blessing et al. (US patent no. 6,239,429).

In regards to claim 64, Drew et al. differ from the claimed invention by not disclosing before the at least partially removing the lid from the base, at least partially removing the ion source component from the lid.

Blessing et al. teach before the at least partially removing the lid from the base, at least partially removing the ion source component from the lid (col. 6, lines 44-59).

Since both the Drew et al. and Blessing et al. teach a mass spectrometer operation method, it would be obvious to one of ordinary skill in the art to have before the at least partially removing the lid from the base, at least partially removing the ion source component from the lid of Blessing et al. in the method of Drew et al. because it would allow the removal of the ion source from the vacuum chamber for replacement while leaving the rest of the assembly in tact, thus improving the efficiency of replacing the ion source.

In regards to claim 65, Drew et al. differ from the claimed invention by not disclosing after at least partially removing the ion source component from the lid, inspecting the ion source component with the ion source component at least partially removed from the lid.

Blessing et al. teach after at least partially removing the ion source component from the lid, inspecting the ion source component with the ion source component at

least partially removed from the lid (col. 6, 54-59, maintain the lid is a form of inspecting).

Since both the Drew et al. and Blessing et al. teach a mass spectrometer operation method, it would be obvious to one of ordinary skill in the art to have after at least partially removing the ion source component from the lid, inspecting the ion source component with the ion source component at least partially removed from the lid of Blessing et al. in the method of Drew et al. because it would allow the removal of the ion source from the vacuum chamber for replacement while leaving the rest of the assembly in tact, thus improving the efficiency of cleaning the ion source.

Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Drew et al. (US patent no. 5,313,061) and further in view of Itoi (US patent no. 5,837,883) and Kato (US pgPub 2002/0125425).

In regards to claim 71, Drew et al. teach wherein the external component comprises an electron impact ion source (col. 11, lines35-45).

Drew et al. differ from the claimed invention by not disclosing the other external component comprise a chemical ionization ion source.

Kato teaches wherein the external component comprises an electron impact ion source and the other external component comprises a chemical ionization ion source ([0028], lines 1-8).

Since both Drew et al. and Kato teach a mass spectrometer assembly, it would be obvious to one of ordinary skill in the art to have the external component comprises

an electron impact ion source and the other external component comprises a chemical ionization ion source of Kato in the method of Drew et al. because the plurality of ion sources would provide the capability of performing a plurality of measurements with a shorter time duration of switching ion sources.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Logie whose telephone number is 571-270-1616. The examiner can normally be reached on 7:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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7-20-2007

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